

REMARKS

Claims 1-4 are all the claims pending in the application. Applicants have added new claims 5-9 with this Amendment.

Drawings:

The Examiner has objected to the drawings under 37 CFR § 1.83(a) because they fail to show “reference gas A and subject gas B” as described in the specification. Applicants herewith submit Figure 2 with proposed drawing corrections to indicate reference gas A, subject gas B, and standard gas C.

The drawings are were also objected to as failing to comply with 37 CFR § 1.84(p)(5) because they include reference signs not mentioned in the specification. Specifically, the Examiner refers to: 22e - 22h, 22c and 23b. As for “22c”, Applicants respectfully refer the Examiner to page 8, line 14 where switching valve 22c is discussed. For “23b”, Applicants note that this is an error in the drawings and submit a proposed drawing correction to change the item in Figure 2 to --22b--. Further, Applicants have amended the specification to discuss all of the switching valves 22a to 22h.

Specification:

The Examiner has questioned the technical accuracy of the specification. In particular, the Examiner refers to page 9, lines 14-18 which recite “In general, when the fluid flows within a flow path having a constant tubular diameter at a predetermined flow rate, the flow rate becomes minimum at the center portion of the tube and the flow rate becomes quite large at the portion

near the wall of the tube, as shown in Fig. 1C.” Applicants have amended the specification to correct this administrative error.

Claim Rejections:

Claims 1-3 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Decker (U.S. Patent No. 5,149,380). Decker is related to a device that combines two or more liquid organic reactive components A and B in mixing chamber 11. After the reactive components are mixed, they are, in one embodiment, injected into a mold cavity where the mixture cures and hardens into a finished plastic product. Decker also discloses that this device includes a purging process that uses a gas and “desirably” a liquid solvent (see col. 5, lines 52-57) to purge or clean the dispensing pathway of the mixing chamber 11 after each injection.

Claim 1 recites:

A fluid mixing apparatus which controls supply of a plurality of fluids to mix the fluids, comprising:

*a valve connected to a nozzle to control supply of another fluid to the flow of one fluid; and
said nozzle, a tip end of which is disposed at a center portion of flow of said one fluid.*

The Examiner states that Decker discloses a multi-component fluid mixing and dispensing device comprising valve 25 connected to nozzle 27 to control supply of another fluid to the flow of one fluid 22. The Examiner further states that nozzle 27 includes a tip which is disposed at a center portion of flow of one fluid 22.

Applicants respectfully traverse this rejection and statement by the Examiner. First, there is no indication, either in the Decker specification or Figure 1 that nozzle 27 includes “*a tip end of which is disposed at a center portion of flow of said one fluid.*” In fact, Applicants submit that

one of ordinary skill in the art would not conclude that injection nozzle 27 has a tip at connectors 28 and 29. Rather, just the opposite. That is, if injection nozzle 27 did include a tip, it would be at the portion of the injection nozzle 27 that connects to the mixing chamber 11 so as to be able to better inject the gas 22 and solvent 31 to purge or clean the mixing chamber 11. In addition to not disclosing a tip end feature for the injection nozzle 27, there is no disclosure or suggestion of placing a tip end at a center portion of flow.

Second, while Decker discloses valve 25 to allow solvent 21 to flow to injection nozzle 27, this valve 25 does not control the supply of solvent 21 to the flow of gas 22 as alleged by the Examiner. Rather, solvent 21 and gas 22 never mix in the lines 23, 24, or connectors 28, 29. That is, they are sent to the mixing chamber 11 separately, and their flow never combines. The Decker specification describes that the mixing chamber 11 is purged by a sequential operation in which a liquid solvent is injected into the mixing chamber 11, and thereafter, a pressurized gas 22 is injected into the mixing chamber 11 (see col. 4, lines 7-17; see also col. 4, line 67 to col. 5, line 24 describing the process of separately providing liquid solvent and pressurized gas into the mixing chamber 11). As such, this feature is also not disclosed or suggested by Decker.

Claim 3 recites:

A fluid mixing apparatus according to claim 1, wherein a direction of the nozzle inserted within flow of the one fluid is perpendicular to a flowing direction of the one fluid.

In the rejection of claim 3, the Examiner states that other fluids A and B enter the mixing chamber in a perpendicular direction to the fluids 21 and 22. Applicants traverse this rejection for at least three reasons. First, claim 3 is allowable because it is dependent on claim 1. In

addition, claim 3 also recites a nozzle inserted within flow of one fluid. There is no disclosure that the injection nozzle 27 is inserted within the flow of either the gas 22 or solvent 21. Finally, the Examiner's rejection is not based on the disclosure of Decker or the features of the claims. That is, claim 3 is dependent on claim 1. Claim 1 defines that the nozzle controls supply of another fluid to the flow of one fluid. In Decker, on the other hand, gas 22 or solvent 23 are never provided to the mixing chamber at the same time as either fluids A and B. One of ordinary skill in the art would also recognize that the mixture of gas 22 or solvent 23 at the same time with fluids A and B would contaminate the mixture of fluids A and B. Thus, the Examiner's scenario is not based on the disclosure of Decker or the features of dependent claim 3. Therefore, claim 3 is allowable a well.

Claim Rejections - 35 U.S.C. § 103(a)

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Decker in view of Harada (U.S. Patent No. 6,312,761). The Examiner acknowledges that Decker does not disclose a first and a second controller. The Examiner finds these features in the disclosure of Harada. The Examiner states that Harada teaches the use of first controller 45 and second controller 46 in a multi-component fluid mixing device for the purpose of controlling the gas mixing in a desired proportion (citing Figure 1). Therefore, the Examiner concludes it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the multi-component fluid mixing and dispensing device of Decker in view of Harada such that first and second controller could be provided in order to control the gas mixing in a desired proportion.

Applicants traverse this rejection for a number of reasons. First, claim 4 also recites the feature of a tip end of the nozzle disposed at a center end of the first gas path. This feature is not disclosed in Decker for the reasons above. In addition, the shower nozzle 12 of Harada would not be disposed at a center end of a first gas path because in Harada, the first feedstock gas and the second feedstock gas do not mix (see Abstract).

In addition, while the general principles of controllers are disclosed in Harada, one of ordinary skill in the art would not combine the Harada disclosure with Decker. That is, as stated, one of the features of Harada is *not* mixing gases together- opposite from the present invention. In addition, Harada is related to a film processing method for tungsten nitride film, while Decker is related to a liquid injection process for forming plastics. In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor, or, if not, then be reasonably pertinent to the particular problem that the inventor was concerned (see MPEP 2141.01(a) and the cited case law). Applicants submit that an inventor would not be motivated to search for Harada in view of the disclosure of Decker since the fields are completely different. The rejection of claim 4 is based on improper Examiner hindsight in view of Applicant's own disclosure. Accordingly, Applicants submit that claim 4 is allowable.

New Claims:

Applicants have added new claims 5-9 to further define the invention.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 10/086,423

Attorney Docket No. Q68580

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Ronald Kimble
Registration No. 44,186

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

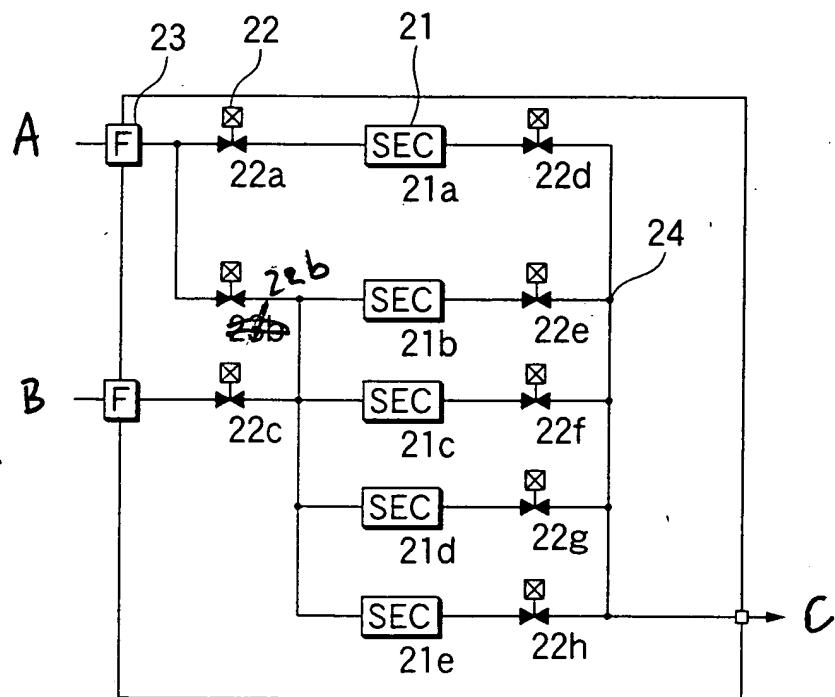
WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: February 18, 2004



Proposed Drawing Corrections

FIG.2



Approved
Secy.